Recovery Kernel

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- [illegible] **1 —** [illegible] [illegible]. [illegible] [illegible] [illegible] **(Whole-genome sequencing) $\rightarrow$** [illegible] **VCF** [illegible] **$\rightarrow$** [illegible] [illegible].
- [illegible] **2 —** [illegible] [illegible] [illegible] [illegible]. **MTHFR (**[illegible]**), COMT (**[illegible]**), CYP2D6 (**[illegible]**), GABRA2/GABRB3** [illegible] **(**[illegible]**), [illegible] OPRM1/DRD2** [illegible] [illegible].
- [illegible] **3 —** [illegible] [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible].
- [illegible] **4 —** [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible] **(stimulant)** [illegible] [illegible] **(dissociative)** [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]: [illegible], [illegible], [illegible].
- [illegible] **5 —** [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] — [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].
- [illegible] **6 —** [illegible] **AI** [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] **AI** [illegible] [illegible] [illegible] [illegible] [illegible] [illegible], [illegible].

> [illegible] [illegible] [illegible] [illegible]
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> [illegible] [illegible], [illegible] [illegible], [illegible] [illegible]. [illegible] [illegible] [illegible] — [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

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[illegible] 2 — [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible]; [illegible] [illegible]. [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

[illegible] 1 — MTHFR ([illegible] [illegible])

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. MTHFR [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible]	[illegible]	[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible]/[illegible]	[illegible] / [illegible] [illegible] — [illegible] [illegible]	[illegible] [illegible] [illegible]. [illegible] [illegible], [illegible], [illegible] [illegible] [illegible] - [illegible] [illegible].
[illegible]/[illegible]	[illegible]	[illegible]; [illegible] [illegible] [illegible] [illegible] [illegible].

[illegible] [illegible] [illegible]-[illegible] [illegible] [illegible] [illegible]: [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible].

[illegible] 3 — CYP2D6 ([illegible] [illegible])

[illegible] [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] — [illegible] [illegible] [illegible] [illegible] [illegible] '[illegible] [illegible]' [illegible].

[illegible]	[illegible]	[illegible] [illegible] [illegible]
[illegible] [illegible] (PM)	[illegible]. [illegible]/[illegible] [illegible] [illegible] [illegible].	[illegible] [illegible]. [illegible] [illegible]. Naloxone [illegible].
[illegible] (IM)	[illegible] [illegible].	[illegible] [illegible] [illegible].
[illegible] (NM)	[illegible].	[illegible] [illegible].
[illegible] (UM)	[illegible]; [illegible] [illegible].	[illegible]. [illegible] [illegible] [illegible].

[illegible] 4 — GABRA2 / GABRB3 ([illegible] [illegible])

[illegible] (impulse-control axis), [illegible] GABRA2 [illegible] (inhibitory tone) [illegible] - [illegible] '[illegible]' [illegible]. [illegible] [illegible]. [illegible]; [illegible] [illegible] [illegible] [illegible] [illegible] (receptor architecture) - [illegible] [illegible] [illegible].

[illegible]	[illegible]	[illegible] [illegible] [illegible]
GABRA2 [illegible] [illegible] (rs279858 [illegible]-[illegible]) — ~15–	[illegible] [illegible]. [illegible] [illegible] [illegible]	[illegible]/[illegible] '[illegible] [illegible]' [illegible]. [illegible]-

[illegible]	[illegible]	[illegible] [illegible] [illegible]
20%	[illegible] [illegible] [illegible] [illegible] [illegible].	[illegible] [illegible] [illegible]. [illegible]-[illegible] [illegible] [illegible].
GABRA2 [illegible]-risks — ~30–35%	[illegible] GABA [illegible].	[illegible] [illegible] [illegible]; [illegible] [illegible] [illegible] [illegible] [illegible].
GABRB3 [illegible] [illegible] (risk variant)	[illegible] [illegible] [illegible]; [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].	[illegible]/[illegible] [illegible] [illegible] [illegible] - [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

[illegible] [illegible] [illegible] [illegible] [illegible]?

[illegible] [illegible] [illegible] [illegible]. [illegible] **ariant**[illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] **circuit** [illegible] [illegible] [illegible]. [illegible] **GABRA2** [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]-[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] — [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

[illegible]: **GABRA2** [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] — [illegible] [illegible] [illegible], [illegible] [illegible], [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible]: [illegible] [illegible] [illegible] [illegible] [illegible] (**[illegible]**, [illegible]**in**, [illegible], [illegible] [illegible] [illegible] [illegible] [illegible]), [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible].

[illegible] 5 — OPRM1 [illegible] DRD2 ([illegible] [illegible])

- **OPRM1 A118G. G-[illegible] [illegible] (AG/GG)** [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] **Naloxone** [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] — [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].
- **DRD2 Taq1A ([illegible] [illegible]). A1** [illegible] [illegible] **~30%** [illegible] **D2** — [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible]: [illegible] [illegible] '[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible],' [illegible] [illegible]-[illegible] [illegible] [illegible] [illegible] [illegible] — [illegible] [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible] **(UMP + DHA + CDP-choline)** [illegible] [illegible] [illegible].

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